AC4

Product Specification/Installation Sheet

Description

The Liebert AC4 is ideal for coordinated control of systems with redundant equipment, such as multiple environmental units or pumps. When the AC4 controller detects an alarm in an operating device, the AC4 enables a standby device and controls the device in alarm as configured, either leaving that device operating or disabling it.

The AC4 controller can also balance usage of devices by rotating units through Operating and Standby modes according to a user-defined schedule. This helps keep redundant equipment operating efficiently and only when needed. The AC4 can perform routine testing of standby devices and alert personnel if a standby device fails an operating test and requires attention.

Another capability of the AC4 is monitoring the status of connected devices and keeping personnel apprised through local alarming.

The AC4 controller can interface with anything that closes an electrical contact. To improve process efficiency and troubleshooting, the controller tracks data in two types of logs: alarm and event. The AC4 has a local LCD interface and an RS232 interface.

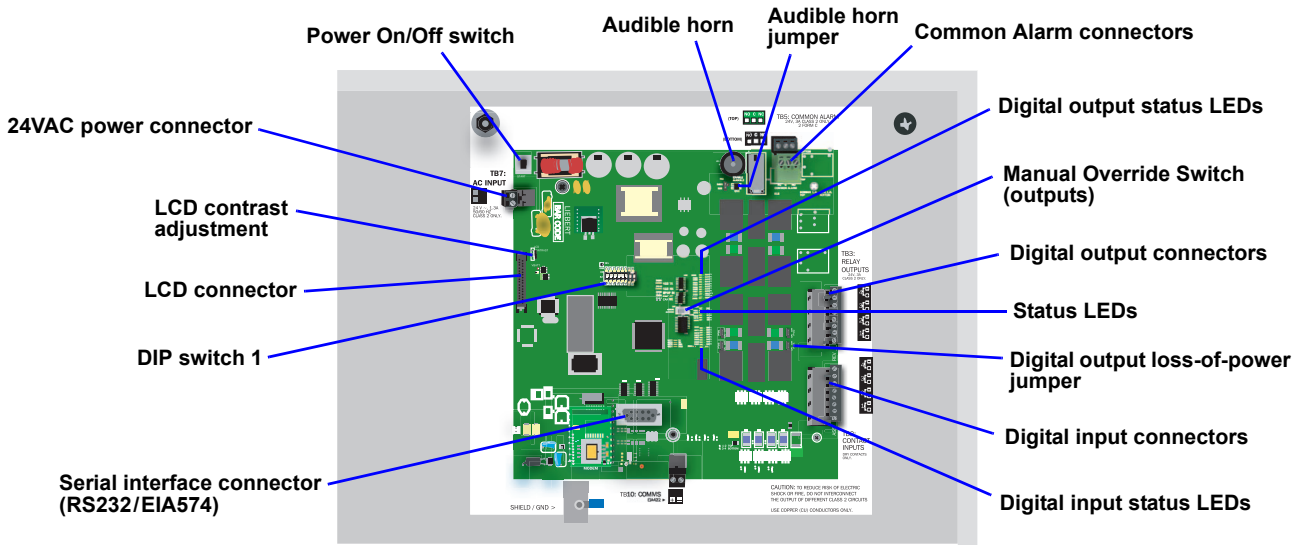
When an alarm condition arises, the AC4 displays alarm information, sounds an audible alarm, changes the state of the common alarm relay and turns connected devices on or off according to user configuration.

For other applications, contact your local Liebert representative or call 1-800-222-5877.

Features and Benefits

- Custom configuration for specific applications
- Alarm and Event logs with time and date stamp
- Backup and download configuration files
- User interface for configuration and monitoring via local LCD or RS232 port
- On-board audible alarm
- Configuration data and operating program permanently stored in nonvolatile Electrically Erasable Programmable Read Only Memory (EEPROM) for protection against power loss
- Real-time clock
- Status LEDs for verification and diagnostics

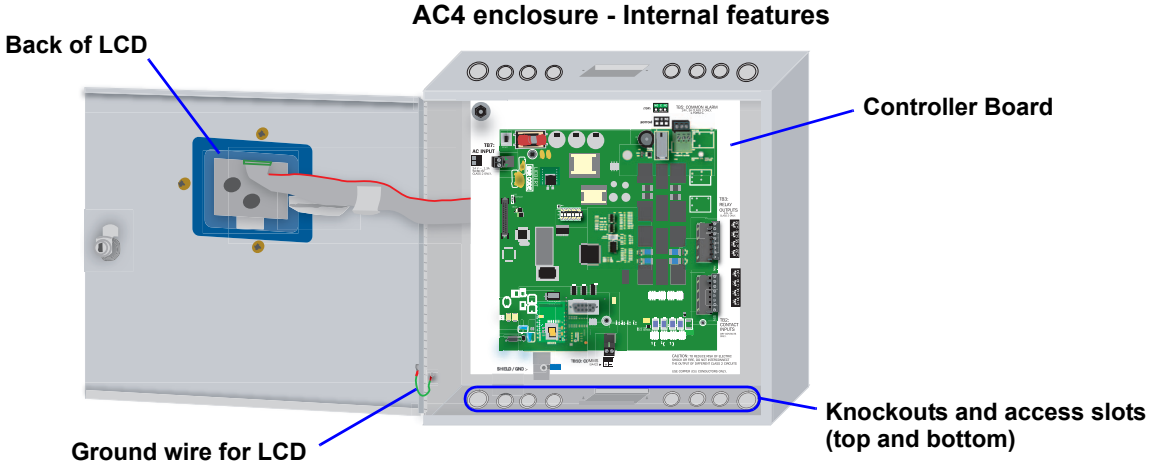
AC4 Components and Key Features



Hardware and Components

The AC4 comes standard with an enclosure, a controller board and a liquid crystal display (LCD).

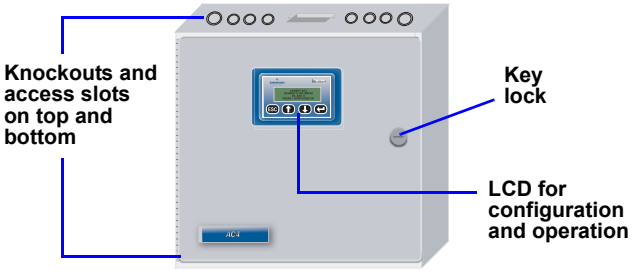
AC4 enclosure - Internal features



Enclosure

The AC4 enclosure features a key lock for added security. The enclosure is made of metal to accommodate secure conduit fittings and protect components against environmental debris.

AC4 enclosure - External features



- The enclosure is designed for easy wire routing and terminations. Access slots for communication cables and network wires are located on both the top and bottom of the enclosure.
- The enclosure is 2-3/4" deep, allowing for recess mounting in a wall. The enclosure may also be flush-mounted.
- The enclosure houses the LCD and the controller board.

Controller Board

The controller board supports a total of 10 points (four digital inputs, four digital outputs and two Common Alarm outputs).

Point Type	Point Count
Digital input	4
Digital output	4
Common Alarm output	2

The digital inputs are dry contacts. The digital outputs and Common Alarm outputs are Form C contact relays. The Common Alarm output is one output with two sets of contacts.

The point terminations are made using removable terminal blocks. This allows for easier access to the terminators, streamlining the process of connecting external devices to the AC4.

The controller board is a microprocessor-based platform for program execution.

The firmware, including the operating system and user-defined data, is stored in nonvolatile flash read-only memory. Flash ROM may be easily upgraded at the job site, simplifying the process of installing new firmware as it becomes available.

An RS232 operator terminal port is included with each controller board for operator devices such as a simple CRT terminal or laptop PC.

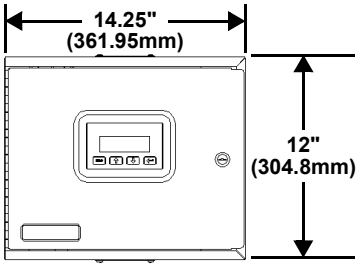
Keypad Display

The keypad display is a user interface mounted on the enclosure door of the AC4.

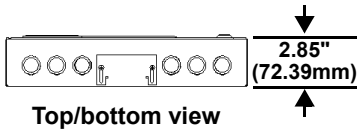
The display provides for complete monitoring and configuration of the panel and is password-protected.

The keypad display provides the ability for the AC4 to operate as a complete standalone panel.

Dimensions



Front view



Top/bottom view

Wiring Specifications

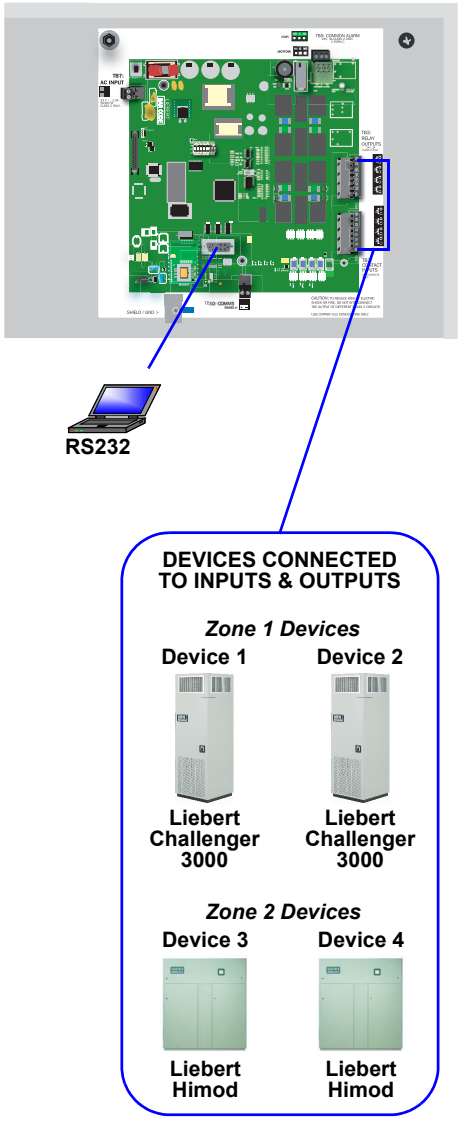
Connection	Supported Wire Type	Maximum Wire Length			Rating
Digital Input	18-22 AWG Stranded & Unshielded **18 AWG* (recommended)** Non Plenum - Belden 9740 Plenum - Belden 89740	750 ft. (225m)			Dry Contact (24VDC, 10 mA)
Digital Output	18-22 AWG Stranded & Unshielded **18 AWG* (recommended)** Non Plenum - Belden 9740 Plenum - Belden 89740	18 AWG* (recommended)	20 AWG	22 AWG	24VAC @3A
		@3A 50 ft. (15m) @2A 100 ft. (30m) @1A 200 ft. (60m)	@3A 40 ft. (12m) @2A 60 ft. (18m) @1A 100 ft. (30m)	@3A 25 ft. (7m) @2A 35 ft. (10m) @1A 75 ft. (23m)	
Common Alarm Output	18-22 AWG Stranded & Unshielded **18 AWG* (recommended)** Non Plenum - Belden 9740 Plenum - Belden 89740	18 AWG* (recommended)	20 AWG	22 AWG	24VAC @3A
		@3A 50 ft. (15m) @2A 100 ft. (30m) @1A 200 ft. (60m)	@3A 40 ft. (12m) @2A 60 ft. (18m) @1A 100 ft. (30m)	@3A 25 ft. (7m) @2A 35 ft. (10m) @1A 75 ft. (23m)	
Communication RS232	Null Modem Cable	50 ft. (15m)			N/A
24VAC Power Connection (TB7)	18-22 AWG Stranded & Shielded **18 AWG* (recommended)** Non Plenum - Belden 8770 Plenum - Belden 88770	150 ft. (45m)			24VAC @1.3A

* Recommended

AC4 Specifications

Power Requirements	24VAC ±10% of nominal 50/60 Hz, 1.3A, 30VA
Dimensions W x D x H, in. (mm)	14-1/4 x 2-3/4 x 12 (361.95 x 69.85 x 304.8)
Weight (Assembled)	7.68 lbs (3.48 kg)
Enclosure Type	NEMA 1
Liquid Crystal Display (LCD)	Four line, 20 character, backlit
Mounting Surface	Building Wall or Structural Member
Ambient Operating Environment	32°F to 104°F (0°C to 40°C) 0% RH to 95% RH (non-condensing)
Processor Specifics	
Model	Motorola XC68HC812A4
Clock speed	16MHz
Total RAM	32Kb
Total FLASH	4M
Total EEPROM	4K
A/D Resolution (Analog IN)	12 Bit
Clock Type	Real-Time Clock
Clock battery backup type	Lithium Cell (non-replaceable)
Clock battery life	7 years, constant, no power
Communications	
Local Communications	RS232
Agency Listings	
UL	UL3121
CSA	C22.2 NO. 1010
CE	Yes
FCC Compliance	CFR 47 Part 15
Inputs & Outputs (Quantity)	
Digital Inputs (4)	Dry Contact Closure 24VDC, 10 mA
Digital Outputs (4)	24VAC, 3A
Common Alarm Outputs (2)	24VAC, 3A

Typical Configuration



Ordering Information

Quantity	Part #	Description
	AC4	AC4 controller board in enclosure
	201258P1	RS232 configuration cable
	TM115	Transformer Module 115VAC with two 24VAC outputs (40VA each) and 115VAC receptacle
	TM230	Transformer Module 230VAC with two 24VAC outputs (40VA each)

Liebert Corporation

1050 Dearborn Drive
P.O. Box 29186
Columbus, OH 43229

Telephone: 1-800-877-9222
Facsimile: 1-614-841-6022
www.liebert.com

© 2004 Liebert Corporation
All rights reserved throughout the world. Specifications subject to change without notice.

® Liebert and the Liebert logo are registered trademarks of Liebert Corporation. All names referred to are trademarks or registered trademarks of their respective owners.

SL-31205 (11/04) Rev. 0